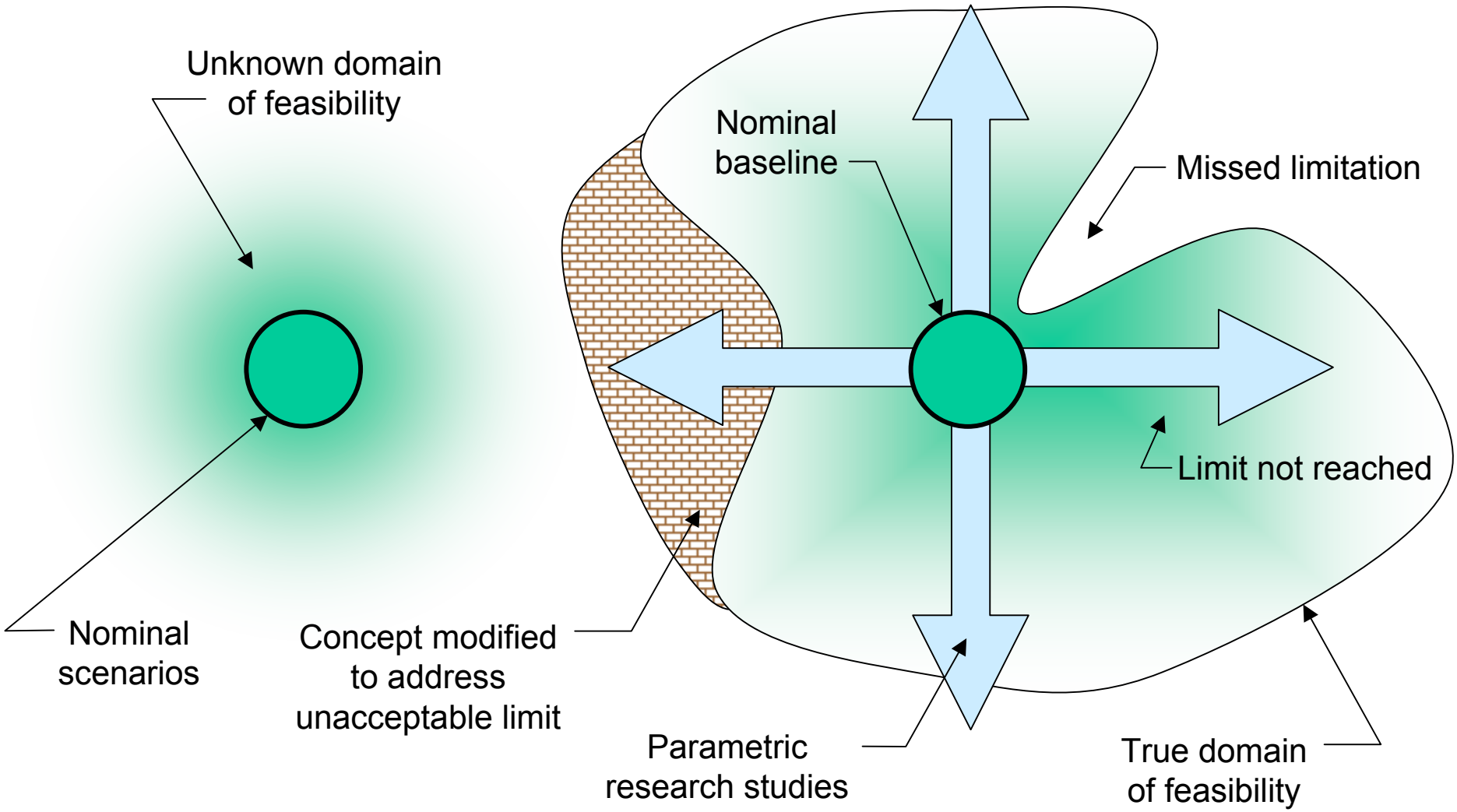
Goals for DAG-TM R&D

- Feasibility limits identified in key areas
- Modestly mature research-prototype tools that meet concept needs (air & ground)
- Concept design parameters identified with initial values estimated
- Demonstration of air/ground procedures
- Benefits validation in key areas
- Value of DAG-TM is made clear (and funding is therefore continued)

Feasibility Limits – where does it break?

- Traffic volume and complexity
- Metering throughput (CE5 output / CE11 input)
- Operational constraints
- Weather system impact (bottlenecks)
- CNS component failures

Probing Limits of Feasibility



Research Prototype Tools

- Situation awareness at appropriate level (i.e., no more than necessary)
- Decision-based guidance (CD&R, spacing, etc.)
- Assistance in constraint management
- Procedures for tool use
- Integrated appropriately into work environment
- Refined through user trials

Concept Parameters

- Look-aheads for CD&R
- Freeze horizons for metering
- Priority flight rules
- Conflict-free protection time
- ADS-B reception range and guarantee
- Separation criteria
- Others?

Demo of Air/Ground Procedures

- **Shows we've thought out the mechanics of how the concept works**
- **Examples:**
  - Status change: autonomous-to-managed
  - Conflict resolution: autonomous/managed
  - CE11 approach procedures (stepwise transition of control to ground)
  - CE11 mixed equipage procedures

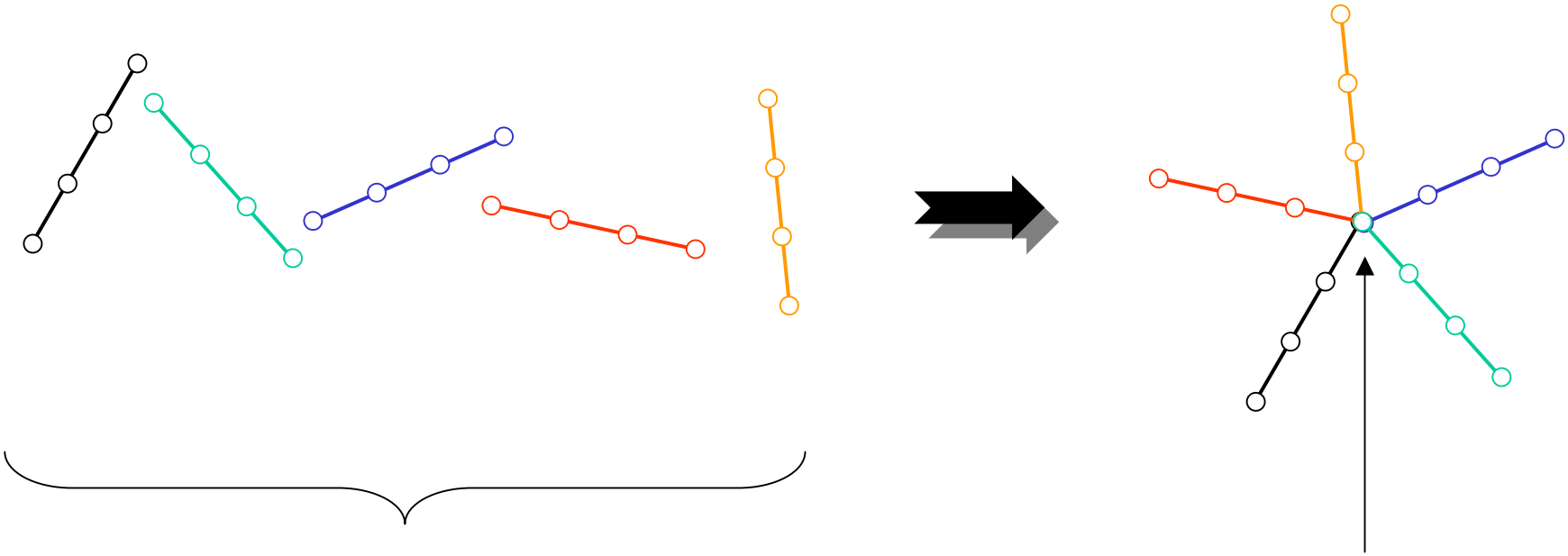
Benefits Validation in Key Areas

- **Support Sub-Element 2**
- **Key benefits only**
  - Scalability
  - Controller workload
  - Throughput
  - Mixed equipage (access)

Value of DAG-TM

- **Management is lukewarm to DAG at best**
- **Need to make management decision to continue this work AN EASY ONE**
- **Show clear evidence of radical benefits and clear feasibility**
  - A key consideration in all simulation research planning from here out

Wagon Wheel Experiment Design

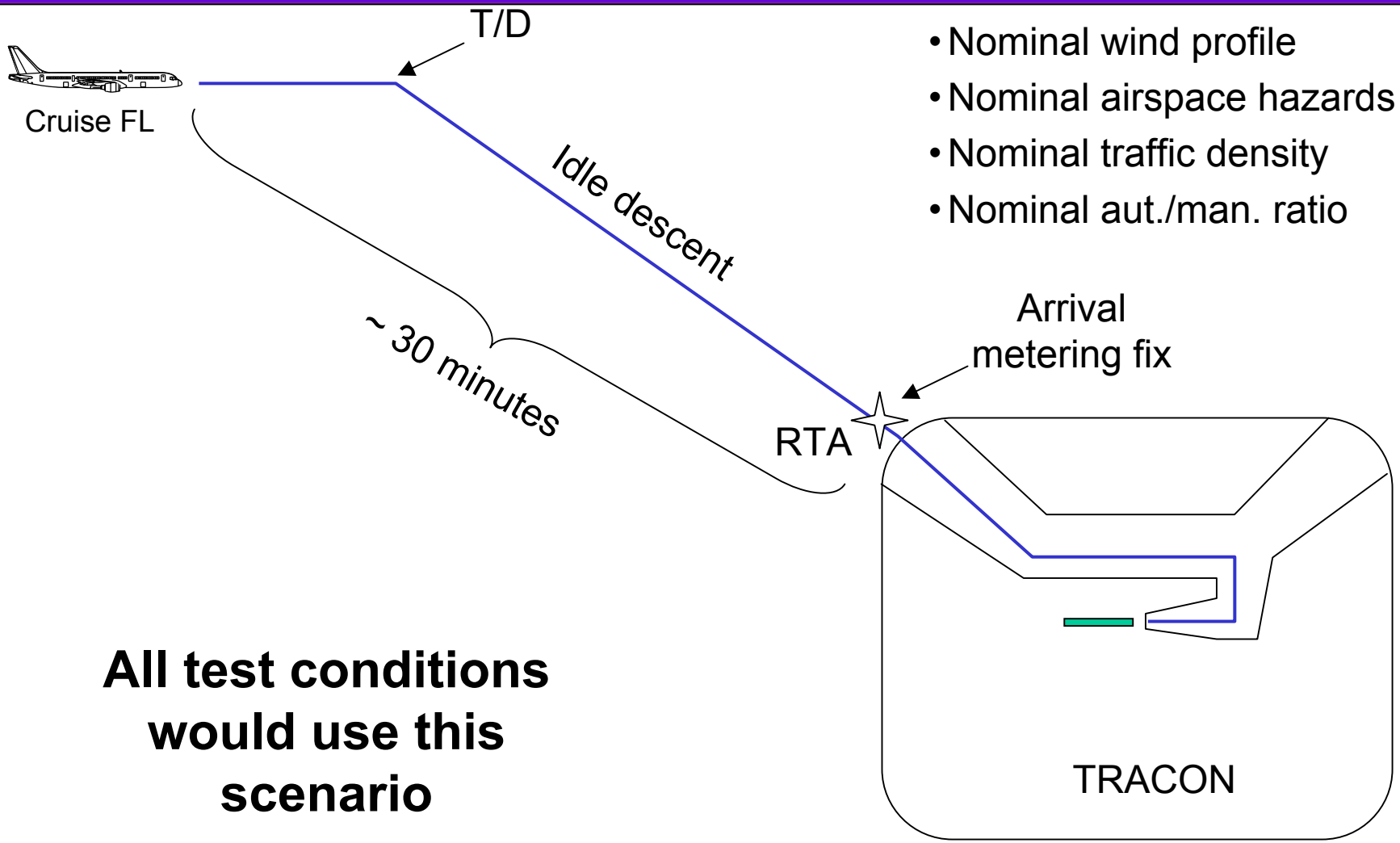


Independent
1-D parametric studies

with a common
baseline design

Test of our Team Building Ability!

Proposed Baseline Scenario for Wagon Wheel Design



- Nominal wind profile
- Nominal airspace hazards
- Nominal traffic density
- Nominal aut./man. ratio

All test conditions would use this scenario